

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An isolated polypeptide having a thermostable ribonuclease H activity, ~~selected from the group consisting of:~~

~~(a) a polypeptide and having the amino acid sequence of SEQ ID NO:1, and~~

~~(b) a polypeptide encoded by a nucleic acid hybridizing to the nucleotide sequence of SEQ ID NO:2 or a complementary strand thereof under conditions of incubation with a probe in 6 X SSC (1 X SSC: 0.15 M NaCl, 0.015 M sodium citrate, pH 7.0) containing 0.5% SDS, 0.1% bovine serum albumin (BSA), 0.1% polyvinylpyrrolidone, 0.1% Ficoll 400 and 0.01% denatured salmon sperm nucleic acid at 68°C for 12 to 20 hours followed by washing in 0.1 X SSC containing 0.5% SDS at 68°C.~~

Claims 2-5. (Cancelled)

6. (Previously Presented) An isolated polypeptide having a thermostable ribonuclease H activity, obtained by culturing a transformant into which a plasmid pApr108 harbored

by *Escherichia coli* HMS174/pApr108 (deposited under accession no. FERM BP-8433) is transferred.

7. (New) An isolated polypeptide having a thermostable ribonuclease H activity and having an amino acid sequence encoded by a nucleic acid that shares at least 90% homology with the nucleic acid sequence of SEQ ID NO:2.

8. (New) An isolated polypeptide having a thermostable ribonuclease H activity,

a. said polypeptide is encoded by a nucleic acid hybridizing to a nucleic acid having a nucleotide sequence of SEQ ID NO:2 or full-length complementary strands thereof under stringent conditions of incubation with a probe in 6 x SSC (1 x SSC:0.15 M NaCl, 0.015 M sodium citrate, pH 7.0) containing 0.5% SDS, 0.1% bovine serum albumin (BSA), 0.1% polyvinylpyrrolidone, 0.1% Ficoll 400 and 0.01% denatured salmon sperm nucleic acid at 50°C for 12 to 20 hours followed by washing in 0.1 x SSC containing 0.5% SDS at 50°C; and

b. said polypeptide having a thermostable RNase H conserved portions encoded by a nucleic acid which is amplified by PCR reaction using primers having nucleic acid sequences of SEQ ID NO:3 and SEQ ID NO:4, and 50 cycles of 94°C for 30 seconds, 45°C for 30 seconds, and 72°C for one minute.

9. (New) An isolated polypeptide having a thermostable ribonuclease H activity, said polypeptide is encoded by a nucleic acid which is amplified by PCR reaction using primers having nucleic acid sequences of SEQ ID NO:8 and SEQ ID NO:9, and 40 cycles of 94°C for 30 seconds, 55°C for 30 seconds, and 72°C for one minute from DNA of the genus *Archaeoglobus*.